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| EXAMINER | |
|---|---|
| NGUYEN, DUC M | |
| ART UNIT | PAPER NUMBER |
| 2618 | |

| SHORTENED STATUTORY PERIOD OF RESPONSE | MAIL DATE | DELIVERY MODE |
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| 3 MONTHS | 04/11/2007 | PAPER |

**Please find below and/or attached an Office communication concerning this application or proceeding.**

If NO period for reply is specified above, the maximum statutory period will apply and will expire 6 MONTHS from the mailing date of this communication.

| Office Action Summary | Application No. | Applicant(s) | |
|---|---|---|---|
| | 09/822,292 | LINK ET AL. | |
| | Examiner | Art Unit | |
| | Duc M. Nguyen | 2618 | |

*-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --*

**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

1)☒ Responsive to communication(s) filed on 2/21/07.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

4)☒ Claim(s) 1-9,12,14-17,19-24,27,28,40-48,51,53-55,57-60 and 63 is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) 1-9,12,14-17,19-24,27,28,40-48,51,53-55,57-60 and 63 is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

**Application Papers**

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____.
5) ☐ Notice of Informal Patent Application
6) ☐ Other: _____.

## *DETAILED ACTION*

This action is in response to the applicant's response filed on 9/18/06. Claims 1-9, 12, 14-17, 19-24, 27-28, 40-48, 51, 53-55, 57-60, 63 are now pending in the present application.

### *Response to Arguments*

1. Applicant's arguments filed 2/21/07 have been fully considered but they are not persuasive.

In the response filed on 2/21/07, Applicant contends that

"None of the cited references teach the detection of a registration signal as a required trigger event for transmitting the third item of information to the wireless device as recited in claims 1 and 40. Rather, the disclosure in Daly processes updates for mobile devices that are based on the state of the device, i.e., inactive versus active (see Figure 12 for processes directed to inactive devices and Figure 13 for processes directed to active devices). While Daly does not specifically define each of these states, it appears that an inactive state is one in which a registration event has not occurred (e.g., the device is powered down, the service subscription invalid, or no signal is available) and an active state is one in which a registration event has occurred. As illustrated in Figure 13, at the time an update is available for a currently active device, Daly teaches that the update is automatically transmitted (steps 1-5). Thus, Daly does not initiate an update only in response to a registration event, but rather initiates the update for all active mobile devices at the time the update is available (see, e.g., column 10, lines 28-46). Thus, if a mobile device is currently active at the time an update becomes available, Daly initiates the update".

In response, the Examiner asserts that the paragraph in col. 10, lines 1-15 clearly teach Daly does initiate an update only in response to a registration event.

In fact, "if a mobile device is currently active at the time an update becomes available, Daly initiates the update" as contended by the Applicant, the Examiner notes that in order to determine whether the mobile is active, the HLR must rely on the last registration of the mobile to an MSC in order to locate the mobile (see col. 10, lines 37-43), which would also implicitly teach "initiate an update only in response to a registration event".

Applicant further contends that

For example, if an update occurs that impacts 15 million users and 12 million users listed in the HLR have their devices active, Daly would attempt to send the update to all 12 million "active" users sequentially, while waiting for the other 3 million inactive users to activate. While Daly may provide an improvement by avoiding update attempts targeted to inactive users, there would still be a large impact on the wireless network as the 12 million active users are updated at nearly the same point in time.
By contrast, the instant application teaches and claims an event driven approach that waits for each user to register (i.e., "detection of a registration signal") and only upon a registration event is the update sent to the newly registered wireless device (i.e., the "transmitting a third item of information to the wireless device only in response to receipt of the second item of information"). This approach may reduce network traffic as it is unlikely that a large number of network users will register at the same time and may further reduce the probability of a partial transfer as a newly registered wireless device should have a maximum amount of time before going inactive. In contrast, an "active" device may have been active for a period of time and has greater probability of going inactive in the near term. For example, if a wireless device user actives a wireless device for 10 minutes and then turns the wireless device off, the instant application would have a 10 minute window for updating information, while Daly may attempt the update at any point during the 10 minute window, increasing the chance of the wireless device going inactive before the update completes.

In response, the Examiner notes that Daly also teaches the update is performed for only a selected subset of mobile (see col. 4, lines 14-18 and col. 7, lines 47-52), not for all the mobile devices. Therefore, <u>if there is any difference on the selection process between the claimed invention and Daly's teaching, the Examiner believes that such difference has not fully and clearly incorporated into the claims</u>. Note that the motivation for updating information upon receiving registration without tying up the network load is known in the art and is clearly disclosed by US 6,564,055 issued to **Hronek** (see col. 3, lines 26-37, 53-60).

Applicant further contends that

Moreover, with respect to claims 1 and 40, the Examiner states that the "pending database" and "concerned database" are taught by Daly. However, the Examiner does not point to any particular portion of the reference where these databases may be found. Daly sets a flag in the HLR to indicate a delivery pending (column 6, lines 2-5). If the Examiner is implying that this delivery pending flag is equivalent to the features recited with respect to the pending and concerned databases of claims 1 and 40, then this interpretation is in error. The sequence of actions taken as disclosed in Daly is distinguishable f~om the sequence recited in Claim 1. Figures 12 and 13 of Daly, along with their associated descriptions, indicate that an "OAP waiting indicator" is set and cleared in response to establishing communication between the OTAP and the MSC, where the MSC has either confirmed that an MS (wireless device) is active or registered if previously inactive. Once the HLR of Daly has completed the connection between the OTAP

and the MSC, the HLR does not perform any further tasks and the OTAP controls the update process. In contrast, the pending database disclosed in Claims 1 and 40 of the instant application provides an entry after the third item o fin formation has been sent. In other words, Daly waits, or is pending, in establishing communication with the wireless device, not upon the successful transfer of the IRDB as claimed.

In response, the Examiner notes that the HLR would comprise a database(s), the OTAP would comprise a database(s), the IRDB would also comprise a database(s). Therefore, the claimed "pending" or "concerned" databases are just databases with different "terminology", and the examiner believes that Daly would implicitly teach such databases in order to keep track records of mobile devices for operation, maintenance and administration purpose. As to the limitation regarding "provides an entry after the third item of information has been sent", the Examiner notes that since the third information is just an update information (i.e, list of service providers for roaming), it is clear that Daly would implicitly teach such entry (i.e, "done", "successful") in order to keep track a record in the database which mobile has been updated.

Applicant further contends that

Josenhans does not cure the aforementioned deficiencies of Daly. Josenhans teaches a method and system for preventing mobile roaming fraud through monitoring messages using a protocol analyzer on an SS7 network (Abstract). Registration/validation requests are monitored for authorized roaming (Abstract). The Examiner asserts that the MSC in Daly would "obvious[ly] utilize a device similar to the protocol analyzer as disclosed by Josenhans, for monitoring and detecting registration request messages." The Examiner has mischaracterized the teachings of Josenhans with respect to the structure and purpose of the protocol analyzer in Josenhans and the instant application, and the absence of a protocol analyzer in Daly. The protocol analyzer disclosed in Josenhans "passively monitors the SS7 network" (Col. 4, line 54). The MTSOs 404, 504, 604, 704 of FIGs. 4-7 in the instant application are equivalent to the MSC in Daly. Daly teaches modifying the elements of an IS-41 network, and thus has no need for passive monitoring, particularly since there is no mention of an SS7 network or network elements in Daly.

In response, the Examiner notes that Johansen is used solely for its teaching of utilizing a protocol analyzer to detect registration requests. Therefore, the MSC in Daly

would also employ some "equivalent" devices in IS-41 network to detect registration requests as well. Since the "protocol analyzer" is not specifically defined in the specification, such "equivalent" devices in IS-41 network to detect registration requests would read on the claimed "protocol analyzer" with the broadest reasonable interpretation. Further, it would have been obvious to one skilled in the art at the time the invention was made to modify **Daly** to utilize an SS7 network in place of the IS-41 network and would work equally well, thereby providing a protocol analyzer to detect registration requests as claimed.

Applicant further contends that

In rejecting Claims 20-24, 53 and 57, the Examiner concedes, "Daly fails to disclose the centralized database of the HLR is organized into specific databases (pending, concerned and history databases) as claimed." The Examiner has ignored the structure taught in the application. FIGs. 6 and 7 include HLR 608 and 708 respectively as "other network elements" (paragraph 0043) and "other elements of the communications network" (paragraph 0045). Therefore, it should be clear to the Examiner that claimed databases are not merely a repartitioning of an HLR; rather, the claimed databases are patently distinguishable and distinct from an HLR. Further, the Examiner's motivation of using the claimed databases for "easy management of databases" is without support, as no reference is cited to buttress this assertion. Moreover, claims 14, 20, and 53 recite features that are similar to those above with respect to claims 1 and 40. For at least the reasons presented above, the Applicants submit that claims 14, 20, and 53 are in condition for allowance.

In response, the Examiner notes that the claimed "pending" or "concerned" or "history" databases are just databases with different "terminology", and the examiner believes that Daly would implicitly teach such databases in order to keep track records of mobile devices for operation, maintenance and administration purpose. Further, it would have been obvious to one skilled in the art of databases to modify **Daly** to organize databases into specific databases as claimed, for easy management of databases. In response to applicant's argument that the examiner's conclusion of

obviousness is based upon improper hindsight reasoning (no reference is cited), it must be recognized that any judgment on obviousness is in a sense necessarily a reconstruction based upon hindsight reasoning. But so long as it takes into account only knowledge which was within the level of ordinary skill at the time the claimed invention was made, and does not include knowledge gleaned only from the applicant's disclosure, such a reconstruction is proper. See *In re McLaughlin*, 443 F.2d 1392, 170 USPQ 209 (CCPA 1971).

Applicant further contends that

In rejecting Claims 12, 19, 27, and 63, the Examiner states that the motivation to combine McConnell and Daly includes "utilizing advantages provided by SS7 such as flexibility and cost." However, neither McConnell nor Daly teach or suggest the relative cost or flexibility advantages that the Examiner asserts in selecting SS7 over IS-41. Accordingly, the Applicants submit that the Examiner has not established a prima facie case under 35 U.S.C. 103 regarding motivation to combine these references.

In response to applicant's argument that there is no suggestion to combine the references, the examiner recognizes that obviousness can only be established by combining or modifying the teachings of the prior art to produce the claimed invention where there is some teaching, suggestion, or motivation to do so found either in the references themselves **or** in the knowledge generally available to one of ordinary skill in the art. See *In re Fine*, 837 F.2d 1071, 5 USPQ2d 1596 (Fed. Cir. 1988)and *In re Jones*, 958 F.2d 347, 21 USPQ2d 1941 (Fed. Cir. 1992). In this case, since network SS7 network has advantages such as flexibility and cost over the IS-41 network (knowledge generally available to one of ordinary skill in the art), by utilizing network

SS7 over IS-41, the motivation to do so found either in the references themselves (i.e, flexibility and cost).

Applicant further contends that

Regarding Claim 54, the Examiner has lumped claim 54 with the summary 103(a) rejections in Item 2 of the Office Action but has not provided any reasons as to why claim 54 was rejected. This deficiency was also present in the previous office action.

In response, the rejection for claim 54 has been included below.

***Claim Rejections - 35 USC § 103***

2. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

3. Claims **1-8, 14-17, 20-24, 40-47, 51, 53-55, 57-60** are rejected under 35 U.S.C. 103(a) as being unpatentable over **Daly** (US Pat No. **6,122,503**) in view of **Leung** (US **6,195,546**) and **Josenhans** et al (US **5,953,653**).

Regarding claim **1**, **Daly** discloses a method for updating the memory (internal database) of a mobile phone via over-the-air programming (OTAP) using SMS messages which would include all the claimed limitations (see **col. 3, line 65 - col. 4, line 48**), comprising:

- receiving a first information relating to a new or revised (update) agreement

between a wireless service provider and a subscription company servicing the first wireless device, the first item of information corresponding to at least one wireless service provider that is associated with a local calling area as claimed (see **col. 5, line 52 – col. 6, line 9** and **col. 3, lines 47-48**);

- targeting a set of subscribers (subset) associated with wireless devices for receiving the first information as claimed (see **col. 4, lines 14-18**);
- waiting for a second item of information related to autonomous registration event by the wireless device (see **col. 5, line 52 – col. 6, line 9 and col. 10, lines 1-15**);
- receiving a second information related to autonomous registration event (active or inactive) via IS-41 link (see **col. 5, line 52 – col. 6, line 9 and col. 10, lines 1-15**);
- transmitting a third information (updates information regarding system operator or service providers in SMS format) as claimed (see **col. 5, line 52 – col. 6, line 9 and col. 10, lines 1-15**);

As to the newly added limitation regarding tracking the pendency of the entry in the pending database for determining a period of time elapsed since the transmitting of a third item of information where no acknowledgement has been received from the wireless device, it is noted that when transmitting an OTAP message to the wireless device, it would have been obvious to one skilled in the art to set a timeout period for receiving an acknowledgement message from the wireless device as disclosed by **Leung** (see col. 10, lines 41-49, col. 12, lines 33-39), in order to determine the

success/failure of the transmitted message. Therefore, in view of Leung, it would have been obvious to one of ordinary skill in the art at the time the invention was made to incorporate **Leung's** teaching to **Daly,** for providing a timeout timer in **Daly** as well, for determining a period of time elapsed since the transmitting of a third item of information (OTAP message) where no acknowledgement has been received from the wireless device, in order to determine the success/failure of the transmitted message.

As to the newly added limitation regarding a protocol analysis for monitoring and detecting a registration signal, it is noted that since **Daly** discloses that "when the MSC receives the registration it sends an IS-41 registration notice (REGNOT) to the HLR" (see **col. 10, lines 1-4**), one skilled in the art would recognize that the MSC in **Daly** would obvious utilize a device similar to the protocol analyzer as disclosed by **Josenhans,** for monitoring and detecting registration request messages (see **col. 4, lines 50-56**). Therefore, in view of **Josenhans**, it would have been obvious to one of ordinary skill in the art at the time the invention was made to modify **Daly** for utilizing a protocol analyzer in the MSC in Daly as well, in order to monitor and detect registration request messages, for transmitting REGNOT messages to the HLR for evaluations.

Regarding claims **2-8**, they are rejected for the same reason as set forth in claim **1** above. In addition, **Daly** further discloses

- converting first information to SMS message (see **col. 10, lines 1-15**) ;
- comparing second information with a record in a concerned data base (see **col. 6, lines 20-63**);
- a state of record (pending or waiting indicator, see **col. 6, lines 20-63**);

- retrieve message for a wait state record (see **col. 6, lines 20-63** and **col. 10, lines 1-15**)
- assembling third information based on characteristics of the wireless device (see **col. 6, lines 20-63**);
- third information is an SMS message (see **col. 10, lines 1-15**) ;
- create an entry in a pending database as claimed (clear indicators, see **col. 3, lines 61-62**);

Regarding claims **14-17**, the claims are interpreted and rejected for the same reason as set forth in claims 1-8 above.

Regarding claims **40-47,** the claims are interpreted and rejected for the same reason as set forth in claims **1-9, 13** above, respectively.

Regarding claims **20-24**, the claims are rejected for the same reason as set forth in claim 1 above. In addition, although **Daly** fails to disclose the centralized database of the HLR is organized into specific databases (pending, concerned and history databases) as claimed, it is noted that providing a plurality of databases is well known in the art (Official Notice), hence, it would have been obvious to one skilled in the art of databases to modify **Daly** to organize databases into specific databases as claimed, for easy management of databases.

Regarding claim **55**, the claim is rejected for the same reason as set forth in claim 53 above. In addition, **Daly** discloses the wireless device transmits acknowledgement as claimed (see **col. 9, lines 33-35**).

Regarding claim **26**, the claim is rejected for the same reason as set forth in claim 11 above.

Regarding claims **49-51**, the claims are interpreted and rejected for the same reason as set forth in claims **10-12** above.

Regarding claims **53, 57**, the claims are rejected for the same reason as set forth in claim 1 above. In addition, although **Daly** fails to disclose the centralized database of the HLR is organized into specific databases (pending, concerned and history databases) as claimed, it would have been obvious to one skilled in the art of databases to modify **Daly** to organize databases into specific databases as claimed, for easy management of databases.

Regarding claim **54**, the claim is rejected for the same reason as set forth in claim 53 above. In addition, Daly as modified would obviously disclose the autonomous registration includes transmitting a mobile identification number, an electronic serial nmaaber and a point code to the system; wherein in response to the transmitting, the mobile identification number is compared with information contained in the concerned database to determine whether the wireless device is identified as waiting for the updated information (see col. 9, line 50 – col. 10, line 60).

Regarding claims **58-59**, the claims are rejected for the same reason as set forth in claim 53 above. In addition, Daly as modified would obviously disclose the step of retrieving a SMS message as claimed (see col. 7, lines 58-65).

Regarding claim **60**, the claim is rejected for the same reason as set forth in claim 53 above. In addition, it is clear that Daly would obviously disclose the step of

receiving autonomous registration from the network as claimed (see col. 10, lines 1-15).

4. Claims **9, 48** are rejected under 35 U.S.C. 103(a) as being unpatentable over **Daly** in view of **Josenhans** and **Leung** and further in view of **Seazholtz** et al (US **5,790,952**).

Regarding claims **9, 48**, **Daly** as modified would disclose all the claimed limitations, see claims 4, 44, except for an unable state after a specified number of attempts has been made unsuccessful. However, Seazholtz discloses a method for discarding data and marking a mobile as unable after a specified number of attempts has been made unsuccessful (see col. 34, lines 59-64). Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to incorporate **Seazholtz's** teaching to **Daly,** for providing a maximum number of attempts in **Daly** as well, for discarding data and marking a mobile as unable after a specified number of attempts has been made unsuccessful, in order to conserve bandwidths and resources (i.e, avoid keep transmitting failed attempts).

5. Claims **9, 48** are rejected under 35 U.S.C. 103(a) as being unpatentable over **Daly** in view of **Josenhans** and **Leung** and further in view of **D' Avello et al** (US **4,831,647**).

Regarding claims **9, 48**, **Daly** as modified would disclose all the claimed limitations, see claims 4, 44, except for an unable state after a specified number of attempts has been made unsuccessful. However, **D' Avello** teaches a message

delivery method wherein an error status is flagged after a predetermined number of attempts has been made (see Fig. 12 B). Therefore, in view of **D'Avello**, it would have been obvious to one skilled in the art at the time the invention was made to set a maximum number of attempts (or retries) in **Daly** as well, and would set an "error" or "unable" status flag to indicate such status if the maximum number of attempts has been made, to conserve bandwidths and resources (i.e, avoid keep transmitting failed attempts).

6. Claims **12, 19, 27, 63** are rejected under 35 U.S.C. 103(a) as being unpatentable over **Daly** in view of **Leung** and **Josenhans,** and further in view of **McConnell** (US **6,418,306**).

Regarding claims **12, 19, 27, 63**, **Daly** as modified would disclose all the claimed limitations, see claim 1 above, except for the limitation regarding SS-7 data link. However, it is noted that since the IS-41 or SS-7 links are both known for connecting links between switching points in a wireless network as disclosed by **McConnell** (see **col. 4, lines 33-40**), it would have been obvious to one of ordinary skill in the art at the time the invention was made to incorporate **McConnell's** teaching to **Daly** to use SS7 link in place of IS-41 as well, for utilizing advantages provided by SS7 such as flexibility and cost. Therefore, in order to receive registration notice, it is clear that a filter would obviously be used in order to filter registration messages from raw SS7 data.

***Conclusion***

7. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

See the attached PTO-892.

8. **Any response to this action should be mailed to:**

Commissioner of Patents and Trademarks

Washington, D.C. 20231

**or faxed to:**

(571) 273-8300 (for **formal** communications intended for entry)

(571)-273-7893 (for informal or **draft** communications).

Hand-delivered responses should be brought to Customer Service Window, Randolph Building, 401 Dulany Street, Alexandria, VA 22314.

Any inquiry concerning this communication or communications from the examiner should be directed to Duc M. Nguyen whose telephone number is (571) 272-7893, Monday-Thursday (9:00 AM - 5:00 PM).

Or to Matthew Anderson (Supervisor) whose telephone number is (571) 272-4177.

Duc M. Nguyen, P.E.

Apr 2, 2007